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**Acoustics — Reference zero for the  
calibration of audiometric equipment —**

Part 6:

**Reference threshold of hearing for test  
signals of short duration**

*Acoustique — Zéro de référence pour l'étalonnage d'équipements  
audiométriques —*

*Partie 6: Niveaux liminaires d'audition de référence pour signaux d'essai  
de courte durée*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 389-6 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

ISO 389 consists of the following parts, under the general title *Acoustics — Reference zero for the calibration of audiometric equipment*:

- *Part 1: Reference equivalent threshold sound pressure levels for pure tones and supra-aural earphones*
- *Part 2: Reference equivalent threshold sound pressure levels for pure tones and insert earphones*
- *Part 3: Reference equivalent threshold force levels for pure tones and bone vibrators*
- *Part 4: Reference levels for narrow-band masking noise*
- *Part 5: Reference equivalent threshold sound pressure levels for pure tones in the frequency range 8 kHz to 16 kHz*
- *Part 6: Reference threshold of hearing for test signals of short duration*
- *Part 7: Reference threshold of hearing under free-field and diffuse-field listening conditions*
- *Part 8: Reference equivalent threshold sound pressure levels for pure tones and circumaural earphones*
- *Part 9: Preferred test conditions for the determination of reference hearing threshold levels*

## Introduction

IEC 60645-3 specifies audiometric test signals of short duration. These short-duration signals consist of clicks and tone-bursts, and they are used in different diagnostic tests, e.g. in Evoked Response Audiometry such as auditory electrophysiology (electrocochleography, auditory brainstem responses, etc.), and transient evoked otoacoustic emissions. This part of ISO 389 specifies reference threshold values for the short-duration signals.

The reference hearing threshold data for specific transducers described herein will promote agreement and uniformity in the expression of results of hearing threshold measurements.

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# Acoustics — Reference zero for the calibration of audiometric equipment —

## Part 6: Reference threshold of hearing for test signals of short duration

### 1 Scope

This part of ISO 389 specifies reference hearing threshold levels for tests signals of short duration applicable to the calibration of audiometric equipment where such signals are used.

NOTE 1 Some notes on different parameters and their effects on threshold levels are given in Annex A.

NOTE 2 Preferred test conditions for determining hearing thresholds for standardization are specified in ISO 389-9.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 389-1, *Acoustics — Reference zero for the calibration of audiometric equipment — Part 1: Reference equivalent threshold sound pressure levels for pure tones and supra-aural earphones*

IEC 60318-1, *Electroacoustics — Simulators of human head and ear — Part 1: Ear simulator for the calibration of supra-aural and circumaural earphones*

IEC 60318-4, *Electroacoustics — Simulators of human head and ear — Part 4: Occluded-ear simulator for the measurement of earphones coupled to the ear by inserts*<sup>1)</sup>

IEC 60318-6, *Electroacoustics — Simulators of human head and ear — Part 6: Mechanical coupler for the measurements on bone vibrators*<sup>2)</sup>

IEC 61094-1, *Measurement microphones — Part 1: Specifications for laboratory standard microphones*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 389-1 and the following apply.

#### 3.1

##### **short-duration signal**

signal having a duration of less than 200 ms

1) Revision of IEC 60711:1981.

2) Revision of IEC 60373:1990.